



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
06/679,058	12/06/84	ISHIYAMA K	39-1517-2

OBLON, FISHER, SPIVAK,
MCCLELLAND & MAIER
1755 S. JEFF. DAVIS HWY.
ARLINGTON, VA 22202

EXAMINER	
BUDD, M	
ART UNIT	PAPER NUMBER
212	

DATE MAILED: 12/17/85

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined. ☒ Responsive to communication filed on 10/9/85 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), _____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449 | 4. <input type="checkbox"/> Notice of informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474 | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-7 are pending in the application.
Of the above, claims 7 are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-6 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. These drawings are ☐ acceptable;
☐ not acceptable (see explanation).
10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved. ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections **MUST** be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received
☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

Art Unit 212

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1, 2 and 4-6 are rejected under 35 U.S.C. 103 as being unpatentable over Erikson or Ziedonis in view of Yoshikawa or Plesset. Erikson and Ziedonis teach a flexible transducer assembly that is concave. Providing multiple layer impedance matching and damping backings are conventional manipulations to prevent reflected waves and to match a transducer to its load, and providing Erikson or Ziedonis with these known enhancements would be obvious to one of ordinary skill in the art. Plesset and Yoshikawa teach it may be advantageous to provide a convex transducer. Given that a convex shape would be desired, one of ordinary skill in the art could readily construct Erikson or Ziedonis to this "inside-out configuration.

Claim 3 is rejected under 35 U.S.C. 103 as being unpatentable over Erikson or Ziedonis in view of Yoshikawa or Plesset as applied to claim 1 above, and

Serial No. 679,058

-3-

Art Unit 212

further in view of Larson or Miller. This claim adds the use of a flexible printed circuit board (p.c.b.) for electrically connecting the transducer leads. Larson and Miller teach the combination of the flexible p.c.b. and a piezoelectric transducer is well known and a question of design choice.

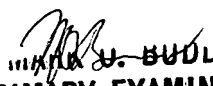
The restriction, untraversed in paper no. 5, is hereby made final.

Further, cited are: Cook (617) - curved piezo assembly Yamaguchi - typical transducer construction w/impedance match and damped backing, Cook (898), Tiersten - flexible backing; Leach -typical impedance matching.

Budd/vsh

(703) 557-4862

12-13-85


MARK D. BUDD
PRIMARY EXAMINER
ART UNIT 212